

SHEATHLESS EMBOLIC PROTECTION SYSTEM

RELATED APPLICATIONS

This application is a continuation-in-part of co-pending application Serial No. 09/740,560 filed on December 19, 2000. Patent No. 6,506,203

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BACKGROUND OF THE INVENTION

The present invention relates generally to improvements in embolic protection systems and methods. In particular, it relates to an improved system and method for enabling an embolic protection device to be efficiently and conveniently compressed and retained in compressed condition so as to cross a stenosis in a low profile and be delivered through the patient's vasculature to a location distal to the site of an interventional procedure, without a sheath extending about the filter device. The system also enables the device to be effectively released from compression thereof at the location distal to the interventional procedure site, for enabling expansion and deployment of the filter device for capturing embolic material.

15 The systems and methods of the present invention are particularly useful when performing balloon angioplasty, stenting procedures, laser angioplasty or atherectomy in critical vessels, such as the carotid, renal, and saphenous vein graft arteries, where the release of embolic debris into the bloodstream could possibly occlude the flow of oxygenated blood to the brain or other vital organs which can cause
20 devastating consequences to the patient.

A variety of non-surgical interventional procedures have been developed over the years for opening stenosed or occluded blood vessels in a patient caused by the build up of plaque or other substances on the walls of the blood vessel. Such procedures usually involve the percutaneous introduction of the interventional device
25 into the lumen of the artery, usually through a catheter. One widely known and medically accepted procedure is balloon angioplasty in which an inflatable balloon is introduced within the stenosed region of the blood vessel to dilate the occluded vessel. The balloon catheter is initially inserted into the patient's arterial system and is